

### ABSTRACT OF THE DISCLOSURE

An image pickup apparatus for picking up an image signal used for measurement of three-dimensional shape, which includes a projector for projecting non-periodic pattern light on an object of measurement; a generator for generating image signals of a number of frames by using optical images of the object of measurement; a limiter for limiting input of the optical images of the object of measurement to the generator; and a timing controller for controlling the projector, the limiter, and the generator so that a signal of a pattern image of the object of measurement being irradiated with the non-periodic pattern light and a signal of a texture image of the object of measurement not being irradiated with the non-periodic pattern light are generated as the image signals of the frames in succession; wherein the timing controller allows the projector to project the non-periodic pattern light on the object of measurement for a period of time shorter than an open time within the open time, the open time being a period during which the limiter does not limit input of the optical images of the object of measurement to the generator.